

# UPS Solutions For Mammography & Other Imaging / Diagnostic Modalities

## General

In today's medical centers and healthcare clinics, the electronic sophistication of medical imaging and diagnostic modalities is providing enhanced imaging, precise diagnostics, and the delivery of highly-accurate data. And because of the advanced technology of the equipment itself, modalities such as **mammography**, **stereotactic breast biopsy**, and **breast-specific gamma imaging** now typically require only 10 kVA single phase power instead of larger kVA ratings and three phase power. More capability using less power!

As evidence of the evolving technology in medical imaging and diagnostics, a prominent mammography OEM led the way in 2011 with the first FDA-approved **3-D digital breast tomosynthesis** solution. According to an industry

report in the December 2010 issue of "HealthImaging.com" the average life of such new 3-D imaging equipment is projected to range between 7 – 10 years; therefore, it is critical to protect this investment from the electrical "wear and tear" of power anomalies, as well as the downtime created by power outages.

Power outages, electrical disruptions, and component failure of any kind result in equipment downtime. Interrupted and rescheduled imaging procedures have a direct adverse effect on not only patient comfort and convenience, but on the entire department's or facility's bottom line.

To specifically protect against outages, many medical centers and healthcare clinics use a standby generator, which typically delivers 480V

three-phase power to the facility. However, the generator may take 7 – 10 seconds to come online after the outage occurs. To bridge this gap in time, a single phase UPS with 5+ minutes of battery backup can provide continuous power to critical equipment and imaging / diagnostics modalities.

However, it's important to remember that while many single phase UPS manufacturers are producing physically smaller products, these manufacturers have accomplished "smaller / cheaper" at the expense of the very load they intend to protect. Imaging and diagnostic equipment manufacturers expect and require an isolated / regulated, stable power source to assure the everyday performance and durability of their systems.



## Typical UPS Installations In Healthcare Clinical Environments

**Figure 1** illustrates the typical installation layout when a UPS is included with mammography equipment. With 480V as the primary source, most UPS manufacturers require the purchase and installation of an external isolation transformer to step-down the 480V power source to the typical single phase UPS voltage requirements of 240V/120V or 208V/120V.

Such a transformer also provides a new neutral for the “critical system” to electronically reference, and establishes an *equipotential ground* \* to assure safe and proper electronic operation.

While commonly followed, this type of installation compounds the input and output wiring requirements, and increases the physical space required in the Clinical

Area in order to include the transformer(s). Factoring-in all these additional materials, equipment, and labor costs can nullify the “savings” from purchasing the “smaller, cheaper UPS”. And of course the need to protect multiple mammography equipment / suites will increase installation costs exponentially.

\* “Equipotential ground” refers to a common reference or grounding point, to which multiple pieces of equipment are all connected.

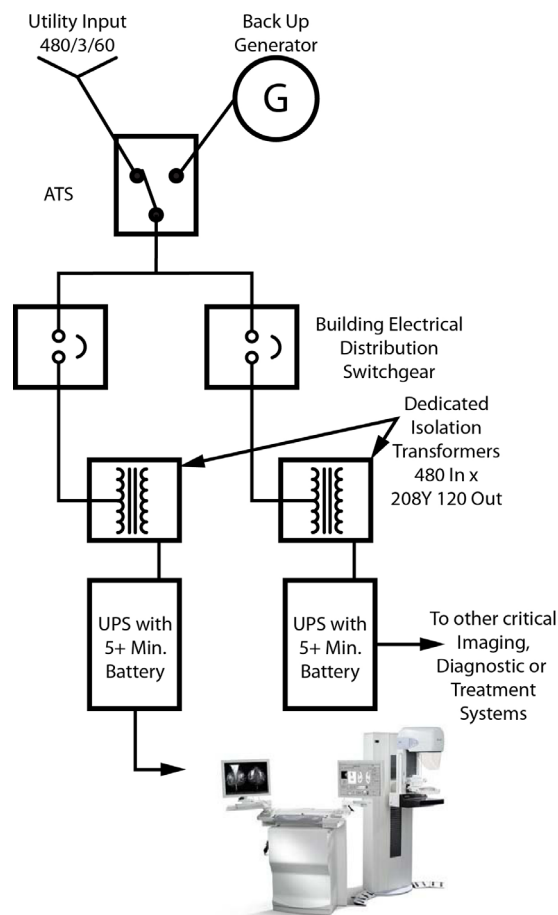


Figure 1



[www.controlledpwr.com/Model\\_ES.html](http://www.controlledpwr.com/Model_ES.html)

## The “MedPowerRx Model ES” Integrated One-Box UPS Solution

**Figure 2** illustrates Controlled Power Company’s complete, integrated “one-box” UPS solution. The single phase “Model ES” UPS includes the step-down

isolation transformer within the UPS cabinet, thus simplifying the wiring and minimizing the physical space requirements.

The “Model ES” includes the following product and installation advantages:

- True online, double conversion topology.
- Superior voltage regulation and UPS performance.
- Multiple extended battery runtime options, which are especially valuable for medical centers and healthcare clinics that lack generators.
- Built-in isolation transformer which meets the medical OEM’s specifications for noise attenuation, and which eliminates the need for additional floor space requirements.
- Integral make-before-break maintenance bypass switch, which minimizes (nearly eliminates) any downtime during service / battery replacement.
- A choice of input / output configurations: simple hardwired input / output connections, or plug-n-play connectivity using customer-selectable output receptacles.
- Industry-leading 3-year warranty.

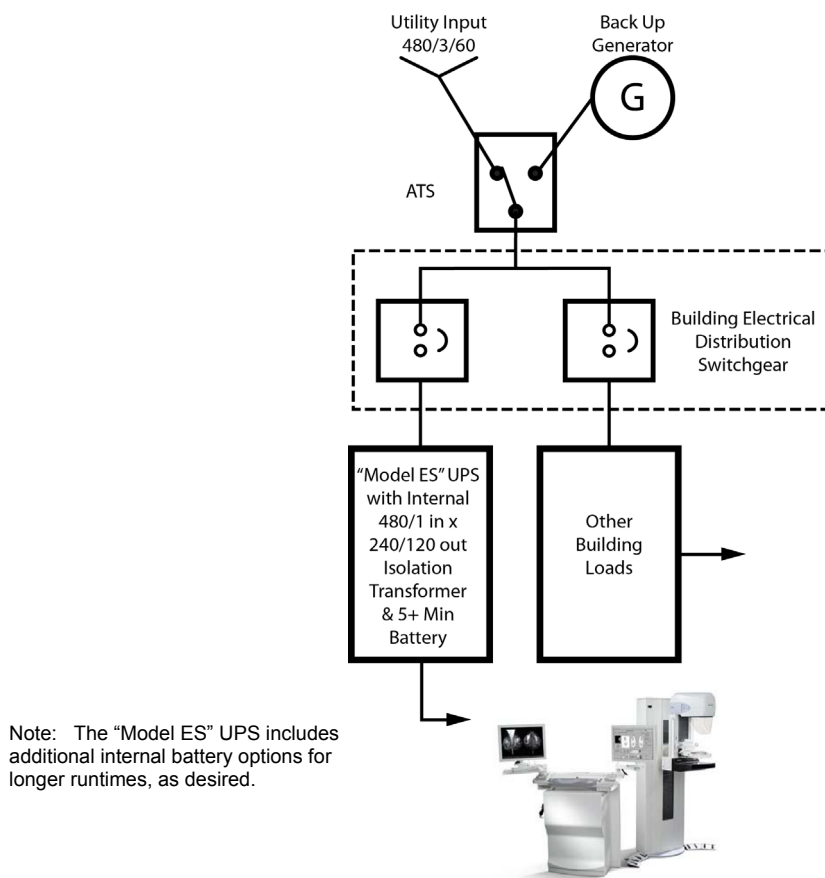


Figure 2

Bottom line, the “Model ES” is the healthcare engineer’s and the customer’s ideal choice in terms of installation, flexible configurations, high performance, and ultimate protection of critical systems!



[www.controlledpwr.com/Model\\_ES.html](http://www.controlledpwr.com/Model_ES.html)